## OCEAN GALES AND STORMS, APRIL 1937

| Vessel | Voyage | | Position at time of lowest barometer | | Gale began April | Time of lowest barometer April | Gale ended April | Lowest barometer | Direction of wind when gale began | Direction and force of wind at time of lowest barometer | Direction of wind when gale ended | Direction and highest force of wind | Shifts of wind near time of lowest barometer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | From— | To— | Latitude | Longitude | | | | | | | | | |
| **NORTH ATLANTIC OCEAN** | | | ° ′ | ° ′ | | | | *Inches* | | | | | |
| Cranford, Am. S. S. | Hamburg | Tampa | 27 20 N. | 62 28 W. | [1] 31 | 7a 1 | 1 | 29.75 | SSE. | SW, 9 | NW. | WNW, 9. | S-SW-WNW. |
| Motocarline, Pan. M. S. | Aruba | Rotterdam | [3] 45 58 N. | 20 53 W. | 1 | 5p 1 | 2 | 29.12 | NW. | W, 7 | W. | WNW, 9. | S-W. |
| Reiyo Maru, Jap. S. S. | Rotterdam | Philadelphia | 38 40 N. | 56 00 W. | 1 | 6p 1 | 2 | 29.15 | E. | NNE, 8 | NW. | N, 9 | ESE-N-NW. |
| Sarcoxie, Am. S. S. | Havre | New York | 41 23 N. | 51 00 W. | 1 | 2a 2 | 2 | 29.22 | ENE. | NE, 11 | N. | NE, 11 | ENE-N. |
| Express, Am. S. S. | Gibraltar | do | 36 11 N. | 39 10 W. | 2 | 6p 2 | 4 | 29.45 | S. | SW, 11 | W. | W, 11 | SW-W. |
| Montgomery City, Am. S. S. | New York | Havre | 41 54 N. | 45 00 W. | 1 | 6p 2 | 3 | 28.40 | ESE. | N, 11 | WNW. | ENE, 12. | ENE-NNW. |
| Binnendyk, Du. S. S. | Baltimore | Rotterdam | 42 08 N. | 45 10 W. | 2 | 6p 2 | 4 | [2] 28.50 | E. | NNE, 11 | NW. | N, 12 | E-NNE-NW. |
| American Farmer, Am. S. S. | London | New York | 42 36 N. | 45 36 W. | 2 | 10p 2 | 3 | 28.50 | | WNW, 8 | NNW. | NNW, 10 | |
| Gorm, Dan. S. S. | New York | Oslo | 44 25 N. | 46 25 W. | 2 | 10p 2 | 6 | 29.09 | NE. | N, 10 | NNW. | N, 10 | NE-NNW. |
| Maasdam, Du. S. S. | Rotterdam | New York | 44 30 N. | 39 48 W. | 2 | 5a 3 | 4 | [2] 28.43 | ESE. | ENE, 7 | N. | NW, 9 | |
| Exminster, Am. S. S. | New York | Casablanca | 40 05 N. | 31 06 W. | 2 | 6a 3 | 5 | [2] 29.24 | SSE. | SSW, 9 | SW. | SSW, 10. | SSE-SSW. |
| Independence Hall, Am. S. S. | Bordeaux | New York | 45 30 N. | 37 42 W. | 2 | 2p, 3 | 5 | 28.33 | SE. | NE, 8 | NNW | NNW, 9. | E-NNE. |
| Sarcoxie, Am. S. S. | Havre | do | 41 00 N. | 60 00 W. | 3 | 6p, 3 | 4 | 29.64 | E. | SSW, 4 | N. | NE, 10. | SSW-SE-NE. |
| Exermont, Am. S. S. | New York | Gibraltar | 39 45 N. | 52 00 W. | 4 | Noon, 4 | 6 | 29.44 | E. | E, 8 | NW. | N, 10 | E-N. |
| Express, Am. S. S. | Gibraltar | New York | 36 10 N. | 42 40 W. | 4 | 11p, 4 | 5 | 29.44 | SW. | W, 10 | WNW. | W, 11 | SW-W. |
| San Alvaro, Br. M. S. | Ardrossan | Tampico | 48 50 N. | 22 20 W. | 6 | 8p, 6 | 8 | 29.02 | S. | SSW, 8 | SW. | SSW, 9. | SSW-WSW. |
| Betterton, Am. S. S. | New York | Houston | 33 50 N. | 75 15 W. | 5 | 10p, 6 | 7 | 29.77 | SE. | S, 6 | NW. | SSE, 9. | SE-WNW. |
| San Jose, Am. S. S. | do | Tampa | 34 00 N. | 77 00 W. | 8 | 8p, 8 | 8 | 29.62 | SW. | SW, 9 | WSW. | WSW, 10. | SSE-WSW. |
| Texan, Am. S. S. | do | Cristobal | 36 31 N. | 73 53 W. | 9 | 4p, 9 | 10 | 29.46 | SW. | SW, 7 | W. | W, 9 | SW-WSW. |
| American Banker, Am. S. S. | Plymouth | Boston | 42 12 N. | 45 54 W. | 10 | 7p, 10 | 11 | 29.41 | SSW. | SW, 4 | W. | WSW, 9. | SSW-WSW. |
| Black Condor, Am. S. S. | Antwerp | New York | 47 50 N. | 33 10 W. | 12 | 2p, 12 | 13 | 29.53 | SW. | WSW, 9 | WNW. | W, 10 | SW-W. |
| Black Tern, Am. S. S. | Rotterdam | Boston | 42 54 N. | 52 46 W. | 13 | 3p, 13 | 13 | 29.52 | NE. | NE, 8 | WNW. | NNE, 9. | NE-NW. |
| Ohio Maru, Jap. S. S. | do | Baltimore | 49 30 N. | 21 25 W. | 14 | 6a, 15 | 16 | 29.26 | SSE. | SW, 7 | N. | W, 11 | SSE-SW-NW. |
| West Chatala, Am. S. S. | London | Dalhousie | 50 10 N. | 21 30 W. | 15 | 8a, 15 | 16 | 29.42 | W. | W, 7 | NW. | W, 10 | WSW-W. |
| Sundance, Am. S. S. | Bremen | Charleston | 49 53 N. | 15 33 W. | 15 | Noon, 15. | 16 | 29.51 | SSW. | SSW, 7 | NW. | WNW, 10 | SSW-W. |
| San Alvaro, Br. M. S. | Ardrossan | Tampico | 28 16 N. | 67 05 W. | 16 | 11a, 16 | 16 | 29.67 | S. | SSW, 9 | WNW. | SSW, 9. | SSE-WSW. |
| Bayano, Br. S. S. | Bermuda | Jamaica | 30 52 N. | 65 31 W. | 16 | 6p, 16 | 16 | 29.50 | SE. | S, 12 | SW. | S, 12 | SE-SW. |
| Fairfield City, Am. S. S. | Gibraltar | Savannah | 38 53 N. | 55 40 W. | 16 | 4a, 18 | 18 | 30.04 | S. | S, 8 | SSE. | S, 10 | S-SSE. |
| Tennessee, Dan. S. S. | Gotheburg | New York | 54 30 N. | 35 55 W. | 17 | 7a, 18 | 19 | 29.54 | S. | W, 9 | W. | WNW, 9. | W-NW. |
| Black Hawk, Am. S. S. | Antwerp | do | 45 32 N. | 40 57 W. | 21 | 4p, 22 | 23 | 29.35 | S. | S, 3 | NNW. | N, 9 | S-NNE. |
| American Merchant, Am. S. S. | London | do | 43 54 N. | 41 42 W. | 21 | 8p, 22 | 23 | 29.15 | SSW. | NNE, 9 | NW. | N, 10 | WSW-NNE-N. |
| Europa, Ger. S. S. | Cherbourg | do | 46 18 N. | 32 48 W. | 23 | 6p, 23 | 23 | [2] 28.96 | SSE. | WNW, 9 | W. | WNW, 10 | |
| Sundance, Am. S. S. | Bremen | Charleston | 41 15 N. | 52 38 W. | 22 | 10p, 23 | 25 | 29.60 | N. | SW, 6 | NNW. | NNE, 10. | SSE-SW-N. |
| Montreal City, Br. S. S. | Bristol | Norfolk | 49 23 N. | 30 17 W. | 22 | Mdt. 23 | 26 | 29.00 | S. | W, 8 | S. | SW, 10. | S-W. |
| West Chatala, Am. S. S. | Houston | Liverpool | 39 40 N. | 55 00 W. | 22 | 3a, 24 | 25 | 29.42 | SE. | NE, 7 | N. | S, 10 | NNE-NE-N. |
| Normandie, Fr. S. S. | Havre | New York | [3] 42 56 N. | 44 01 W. | 24 | Noon, 24. | 25 | 29.17 | S. | S, 9 | NNE. | S, 9 | SE-SW-NNE. |
| Nishmaha, Am. S. S. | New Orleans | London | 40 10 N. | 48 50 W. | 23 | Noon, 25. | 25 | 29.42 | SSE. | NE, 8 | NW. | NE, 9 | NE-NW. |
| Royal Arrow, Am. S. S. | New York | Beaumont | 35 23 N. | 75 00 W. | 25 | 4a, 26 | 26 | 29.37 | E. | ESE, 8 | W. | ESE, 10. | E-S-W. |
| Nagara Mary, Jap. M. S. | do | Cristobal | 34 32 N. | 73 40 W. | 25 | 6a, 26 | 26 | 29.45 | SE. | SSE, 9 | W. | SSE, 9 | SSE-S-W. |
| San Juan, Am. S. S. | San Juan | New York | 37 17 N. | 73 06 W. | 26 | 4p, 26 | 26 | 29.60 | SE. | SE, 9 | SE. | SE, 9 | SE-SSW. |
| Frode, Dan. S. S. | Danzig | do | 49 50 N. | 39 40 W. | 30 | 3p, 30 | [4] 1 | [2] 29.92 | SSW. | WSW, — | NW. | SW, 9 | S-W. |
| **NORTH PACIFIC OCEAN** | | | | | | | | | | | | | |
| Nojima Maru, Jap. S. S. | Yokohama | Los Angeles | 45 30 N. | 174 00 E. | [1] 31 | Mdt. 31 [1] | 1 | 29.03 | W. | W, 8 | WSW. | WSW, 9. | |
| Pres. Jefferson, Am. S. S. | Victoria, B. C. | Yokohama | 51 45 N. | 173 05 W. | 1 | Noon, 2 | 2 | 28.88 | SSW. | SW, 8 | SW. | SW, 9 | SW-W. |
| Toorak, Br. S. S. | Osaka | Los Angeles | 40 49 N. | 174 28 E. | 4 | 2a, 5 | 5 | 29.23 | SSE. | SSE, 9 | NNW. | NNE, 10. | SSE-WSW. |
| Fujisan Maru, Jap. M. S. | Tokuyama | do | 42 47 N. | 168 10 W. | 5 | 7a, 5 | 6 | 29.22 | WNW. | W, 6 | NW. | WNW, 10 | SW-WNW. |
| Athelking, Br. M. S. | San Francisco | Yokohama | 34 04 N. | 146 55 E. | 5 | 10a, 5 | 6 | 29.49 | S. | SW, 8 | W. | SW, 8 | S-W. |
| Omrosan Maru, Jap. M. S. | Tama, Japan | Los Angeles | 41 36 N. | 156 11 W. | 5 | Mdt. 5 | 7 | [2] 29.02 | WSW. | W, 9 | NW. | W, 9 | WSW-NW. |
| Siantar, Du. M. S. | Manila | do | 39 06 N. | 155 55 E. | 5 | 1a, 6 | 8 | 29.24 | SE. | WSW, 6 | W. | SE, 8 | SE-S-WSW. |
| Pres. Jefferson, Am. S. S. | Victoria, B. C. | Yokohama | 45 06 N. | 156 26 E. | 6 | 8p, 6 | 7 | 28.63 | E. | S, 9 | WNW. | S, 9 | S-W. |
| Pres. Grant, Am. S. S. | Yokohama | Seattle | 48 30 N. | 163 02 E. | 5 | 6p, 7 | 7 | 28.91 | SSE. | SW, 8 | WSW. | ESE, 10. | SW-W. |
| Toorak, Br. S. S. | Osaka | Los Angeles | [3] 42 10 N. | 166 06 W. | 6 | ——, 7 | 8 | 29.62 | S. | W, 7 | WNW. | W, 9 | |
| Hanover, Am. S. S. | Nasugbu, P. I. | do | 44 01 N. | 166 33 E. | 7 | Noon, 7 | 8 | 29.33 | SW. | SW, 8 | WNW. | SW, 9 | |
| Tokai Maru, Jap. M. S. | Yokohama | San Francisco | 45 37 N. | 145 49 W. | 6 | 6a, 8 | 9 | 29.29 | NW. | SW, 8 | W. | SW, 8 | NW-SW. |
| Pres. Jefferson, Am. S. S. | Victoria, B. C. | Yokohama | 40 03 N. | 147 06 E. | 8 | 8a, 8 | 8 | 29.62 | W. | NW, 9 | NW. | NW, 9 | W-NW. |
| Kyokuto Maru, Jap. M. S. | Tokuyama | San Francisco | 36 57 N. | 146 51 E. | 9 | 4a, 10 | 10 | 29.33 | ENE. | NNE, 8 | N. | NE, 9 | NE-N. |
| Chichibu Maru, Jap. M. S. | Yokohama | Honolulu | 35 02 N. | 149 50 E. | 8 | 3a, 10 | 11 | 29.15 | E. | S, 7 | W. | WSW, 11 | S-WSW. |
| San Pedro Maru, Jap. M. S. | do | Los Angeles | 40 54 N. | 158 02 E. | 10 | Mdt. 10 | 11 | 29.19 | E. | NNE, 10 | N. | NNE, 10. | NE-N. |
| Tai Shan, Pan. M. S. | do | San Francisco | 43 25 N. | 137 10 W. | 10 | 2a, 11 | 11 | 29.63 | SSW. | SSW, 9 | SSW. | SSW, 9 | |
| Maliko, Am. S. S. | Seattle | Honolulu | 47 07 N. | 127 32 W. | 11 | 10p, 11 | 11 | 29.64 | SE. | S, 8 | S. | SE, 8 | SE-SW. |
| Pres. McKinley, Am. S. S. | Victoria, B. C. | Yokohama | 51 48 N. | 143 00 W. | 11 | Mdt. 12 | 11 | 28.94 | SE. | SSE, 3 | SSE. | SSE, 10. | SSE-SW. |
| Toorak, Br. S. S. | Osaka | Los Angeles | 41 00 N. | 136 10 W. | 12 | 6a, 12 | 12 | 29 16 | S. | S, 7 | SW. | SW, 10. | S-SW. |
| Maliko, Am. S. S. | Seattle | Honolulu | 45 00 N. | 131 48 W. | 12 | 5p, 12 | 13 | 29.04 | SE. | SW, 9 | W. | SW, 9 | ESE-SSW-W. |
| Tai Shan, Pan. M. S. | Yokohama | San Francisco | [3] 39 12 N. | 124 10 W. | 12 | 6p, 12 | 12 | 29.82 | SSW. | SSW, 8 | | SSW, 8 | None. |
| Mana, Am. S. S. | Portland, Oreg. | Honolulu | 43 20 N. | 130 25 W. | 11 | 2p, 12 | 15 | 29.31 | SSE. | SSW, 7 | NNW. | SSW, 8 | SSE-W. |
| Maliko, Am. S. S. | Seattle | do | 42 46 N. | 134 50 W. | 13 | 7p, 13 | 13 | 29.41 | SW. | SW, 6 | SW. | SW, 8 | |
| Winamac, Br. S. S. | Yokohama | Los Angeles | 40 07 N. | 156 17 W. | 15 | 4p, 15 | 15 | 29.74 | S. | SSE, 10 | NW. | SSE, 10. | SE-W. |
| General Lee, Am. S. S. | Portland, Oreg. | Yokohama | 48 35 N. | 169 27 E. | 15 | Noon, 16. | 17 | 29.68 | SW. | WSW, 8 | WNW. | WSW, 8. | |
| Pres. McKinley, Am. S. S. | Victoria, B. C. | do | 47 56 N. | 164 51 E. | 19 | 2p, 19 | 19 | 30.04 | S. | WNW, 5 | WNW. | SSE, 9 | S-WNW. |
| Athelking, Br. M. S. | Yokohama | San Francisco | 40 30 N. | 170 16 W. | 19 | 4p, 20 | 20 | 29.53 | NE. | NNE, 6 | NNE. | NNE, 9. | |
| Ogura Maru, Jap. M. S. | do | Los Angeles | 34 12 N. | 120 12 W. | 22 | 4a, 23 | 22 | 29.95 | N. | NW, 2 | NW. | NNW, 8. | NW-SW. |
| Express of Japan, Br. S. S. | do | Honolulu | [3] 34 54 N. | 140 35 E. | 23 | 8a, 23 | 23 | 30.13 | NE. | NNE, 7 | NE. | NE, 8 | NNE-NE. |
| Irisbank, Br. M. S. | Balboa | Los Angeles | 14 15 N. | 95 20 W. | 25 | 4a, 26 | 26 | 29.90 | NNW. | NNW, 8 | N. | NNW, 8. | |
| Thames Maru, Jap. S. S. | Yokohama | Vancouver, B. C. | 49 29 N. | 136 10 W. | 28 | 8p, 28 | 29 | 29.43 | S. | SW, 8 | SW. | SW, 8 | S-WSW. |
| Illinois, Am. S. S. | Manila | San Francisco | 46 38 N. | 152 28 W. | 28 | 4a, 30 | 30 | 30.04 | NW. | NNW, 6 | N. | NNW, 8. | |

[1] March. [2] Barometer uncorrected. [3] Position approximate. [4] May.

Between Turks Island and Bermuda a LOW developed on the 15th or early on the 16th, and was of comparatively small size for a while but, for the latitude and the time of year, of unusual energy. The British steamer *Bayano*, bound southwestward from Bermuda, had a brief but strenuous encounter with this storm for 3 hours late on the afternoon of the 16th; the greatest force of wind was judged to be 12, this being the third and final report of force 12 from the North Atlantic this month. The further progress of this storm was nearly due northward and late on the 17th it was close to Nova Scotia.

During the final decade of April there was moderate storm activity over and around the Grand Banks and also to eastward near midocean on several days. Close to the American coast there was noteworthy turbulence on the 26th, mainly between Cape Hatteras and Cape May. The LOW concerned had been central near Savannah early on the 25th, with moderate strength, then gained in energy as it took its northeasterly course, finally losing force somewhat on the 27th, as it moved northward and inland.

*Fog.*—Over and near the Grand Banks and thence westward to the coast of Nova Scotia, fog was of rather frequent occurrence, especially during the period from the 15th to 22d. There was, however, somewhat less fog here than is expected in April. The 5°-square, 40° to 45° N., 45° to 50° W., is reported to have had fog on 9 days.

Greater amounts, in fact the greatest anywhere in North Atlantic waters, were noted near New England, where the square 40° to 45° N., 65° to 70° W., experienced 11 days with fog. Here and to southwestward as far as Hatteras fog was more common than is usual during April.

To southward of Hatteras, as far as southeastern Florida, no fog was noted near the American coast. In the Gulf of Mexico, on the other hand, there was greater frequency than is usual as late as April, especially near the northwestern shore. Two tankers collided early on the 8th, 300 miles off Sabine Pass, because of dense fog; each was somewhat damaged, but was able to make port unassisted.

In comparison with March just preceding, fog decreased in the Gulf of Mexico, but increased in almost every square from Hatteras to beyond the Grand Banks.

From the forty-fifth meridian to the immediate vicinity of the British Isles fog was even more infrequent than usual; some squares along the chief steamship lanes have failed to furnish a single report. The waters around Ireland and England, however, had considerable fog, chiefly during the period from the 4th to 11th.

## NORTH PACIFIC OCEAN, APRIL 1937

By WILLIS E. HURD

*Atmospheric pressure.*—Pressure changes over the North Pacific Ocean during April 1937 were unimportant as compared with the normals of the month, except in Alaskan waters. From Dutch Harbor, with an average pressure of 29.88 (0.10 above the normal), to Juneau, average 29.73 (0.23 below the normal), the range of departure from normal was considerable. Between these two stations, Kodiak had the lowest average pressure, 29.70, shown for North Pacific island stations during the month. The average center of the Aleutian LOW was situated over and near the Gulf of Alaska.

In middle latitudes high pressure prevailed with little intermission from the California coast westward almost to Japan. In the region of the Aleutian Islands the barometer remained high from the 18th to the 30th.

TABLE 1.—*Averages, departures, and extremes of atmospheric pressure at sea level, North Pacific Ocean, April 1937 at selected stations*

| Station | Average pressure | Departure from normal | Highest | Date | Lowest | Date |
|---|---|---|---|---|---|---|
| | *Inches* | *Inch* | *Inches* | | *Inches* | |
| Point Barrow | 29.92 | −0.17 | 30.46 | 22 | 29.50 | 25 |
| Dutch Harbor | 29.88 | +.10 | 30.64 | 30 | 28.94 | 3 |
| St. Paul | 29.86 | +.07 | 30.68 | 29 | 28.80 | 3 |
| Kodiak | 29.70 | −.05 | 30.42 | 24 | 29.32 | 1 |
| Juneau | 29.73 | −.23 | 30.20 | 24 | 29.25 | 4 |
| Tatoosh Island | 29.98 | −.02 | 30.38 | 16 | 29.19 | 12 |
| San Francisco | 30.08 | +.03 | 30.27 | 4 | 29.76 | 26 |
| Mazatlan | 29.88 | −.01 | 29.96 | 2, 3 | 29.78 | 21 |
| Honolulu | 30.05 | −.01 | 30.18 | 4 | 29.89 | 29 |
| Midway Island | 30.11 | −.01 | 30.28 | 5 | 29.60 | 23 |
| Guam | 29.85 | −.04 | 29.92 | 1, 2, 6 | 29.77 | 25, 26 |
| Manila | 29.84 | +.02 | 29.89 | 20 | 29.77 | 4 |
| Hong Kong | 29.89 | −.01 | 30.00 | 5 | 29.78 | 12 |
| Nemuro | 30.02 | +.06 | 30.42 | 12 | 29.44 | 5 |

NOTE.—Data based on 1 daily observation only, except those for Juneau, Tatoosh Island, San Francisco, and Honolulu, which are based on 2 observations. Departures are computed from best available normals related to time of observation.

*Cyclones and gales.*—Cyclonic conditions, except during the first 10 days of April, were far less vigorous than in March, and after the middle of the month declined appreciably in intensity. Following the 20th no accompanying gales in excess of force 8 are at this writing of known record for any part of the ocean. The last gale of force as high as 10 occurred on the 15th, near 40° N., 156° W., barometer 29.74, encountered by the British steamship *Winamac*. The only gale of the month reported as of force 11 was experienced on the 10th by the Japanese motorship *Chichibu Maru*, barometer 29.15, in 35°02′ N., 149°50′ E. Anticyclones persisted over central waters of the ocean, while the cyclones of the month mostly traversed higher latitudes. In consequence, few gales occurred to the southward of the 40th parallel, except to the eastward of Japan where high winds occurred on several days between latitudes 30° and 40° N.

Some cyclones originated this month in far eastern waters and proceeded thence northeastward toward the Aleutians; the two principal disturbances, both originating south of Honshu, were those of the 4th to 7th and the 8th to 10th. The earlier proceeded into the Bering Sea; the later dissipated southwest of the Aleutians. Practically all the stormy weather of the month between Japan and longitude 165° E., including the gales of force 8 to 11 occurring on the 5th to 10th, resulted from the activities of these cyclones. In connection with the earlier cyclone, the American steamship *President Jefferson* had the lowest reported barometer of the month on the North Pacific, 28.63 inches, with a south wind of force 9, in 45°06′ N., 156°26′ E.

During the 1st to 3d the Aleutian LOW attained considerable depth over the southeastern Bering Sea and adjacent Pacific waters, the central pressures being below 29 inches. As a result of this disturbed condition, fresh to strong gales were experienced on the 1st and 2d by ships to the southward of the Aleutians.

Along the eastern half of the middle and northern routes, while some scattered fresh gales occurred late in the month, most of the high wind velocities reported were experienced between the 1st and 15th, inclusive. Of these the most important, of force 10, were encountered by the following ships: The Japanese steamship *Fujisan Maru*, on the 5th, near 43° N., 168° W.; the American steamship *President McKinley*, on the 11th, near 52° N., 143° W.; the British steamship *Toorak*, on the 12th, near 41° N., 136° W.; and the British steamship *Winamac*, on the 15th, near 40° N., 156° W.

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